The University of Texas at El Paso
Department of Computer Science
CS 3331 – Advanced Object-Oriented Programming
Instructor: Daniel Mejia
Fall 2021

Programming Assignment 5

Academic Integrity Statement:

This work is to be done in your team. It is not permitted to share, reproduce, or alter any part of this assignment for any purpose. Students are not permitted from sharing code outside of the team, uploading this assignment online in any form, or viewing/receiving/modifying code written from anyone else (aside from teammates). This assignment is part of an academic course at The University of Texas at El Paso and a grade will be assigned for the work produced individually by the student.

Instructions:

This assignment is to be done in teams (2-3 people). Your code must be written in Java. Portions of your assignment will be due on Blackboard. Portions of your assignment will be due on Github Classroom. In the comment heading of your source code, you should write your names, date, course, instructor, programming assignment 5, lab description, and honesty statement.

Scenario:

You have recently been hired to work for *TicketMiner*, a company that sells tickets for sporting events, concerts, special events, etc. You have a many customers and events that are interested in creating their events using your system.

Part A:

1. Write a UML Class Diagram of your system to structure your code using the classes, requirements, and concepts
    a. Write in complete detail
        i. Add all classes, attributes, and methods from your code
            1. Exclude exceptions
            2. Exclude main method
        ii. Model should be unambiguous and consistent

iii. All relationships and multiplicities should be correct
iv. Follow correct syntax of a class diagram

2. Write a Level II UML Use Case Diagram for your system
   a. Minimum:
      i. 5 Use Cases
      ii. 3 Actors
      iii. 3 extends
      iv. 3 includes
      v. Complete Detail
3. Write 3 UML Use Case Scenarios for your system
   a. Write in complete detail
      i. Scenario should be unambiguous
      ii. Scenario should cover all steps of that use-case
      iii. There should be interaction between the actor and system
      iv. Follow correct syntax of use-case scenarios
4. Write a UML State Diagram for your system
   a. Choose any part of the system (just one part)

<u>Part B</u>

1. Conduct a code review on your code (use guide)
   a. For every item on the code review
      i. Write about each in complete sentences; explain for each point
2. Verify that the code meets all the requirements from PA4
   a. Refactor your existing code
      i. Your code should handle all functionality from Programming Assignment 4 (PA4)
      ii. Fix anything that should be corrected
         1. Appropriate data structures
         2. Appropriate use of objects
         3. Relationships between objects
         4. Algorithms and complexity
3. Demo with another team (different from PA4), only functionality – Share the code with the other team
   a. Make sure that they understand what you're talking about
      i. Teams should use the Javadoc as a starting point
   b. Make sure that they cannot break your code
   c. Teams should focus on ensuring all requirements are met (functionality)
   d. Teams should try to break the system
   e. Conduct a code review using the Code Review worksheet

4. Adjust your functionality based on the demos with your classmates
    a. Fix everything that they were able to break
    b. Handle all exceptions gracefully
5. Write the lab report describing your work (template provided)
    a. Any assumptions made should be precisely commented in the source code and described in the lab report.
    b. Write an additional section describing the demo of your classmates
        i. What questions did you have about your classmate’s functionality?
        ii. What concerns do you have about your classmate’s functionality?
        iii. How did you try to break it?
            1. What test cases did you use?
        iv. Attach the code review worksheet
6. Explain why and how this is a black or white box texting
7. Write a PowerPoint Presentation (Template Provided)
    a. You may change the theme of the presentation
    b. You may add slides (if more space is needed)
    c. You may not remove any of the required information

8. Extra Credit (Up 15 points towards final PA5 grade): Implement a GUI application for your system
    a. Ensure its user-friendly (it doesn’t need to be fancy)
    b. Make sure that the bank still fulfills all requirements from previous labs

9. Schedule a demo time with the TA/IA
    a. If you are done early, you may demo before the due date

Deadlines:

November 10, 2021, by 11:59pm – Blackboard:

1. Plan of Action

November 15, 2021, by 11:59pm (Current Progress Commit) – GitHub classroom:

1. UML Class Diagram Progress (.pdf)
2. UML Use Case Diagram Progress (.pdf)
3. UML State Diagram Progress (.pdf)
4. Current Progress Source Code (.java) – Commit current progress up to this point

5. Demo with another team
6. Code Review (.pdf)

For each item (1-4)

a. Does not have to be complete
b. Should be a significant amount of work done (as determined by instructional team)
c. TA/IA will review for progress only

Code Review should be complete

November 22, 2021, by 11:59pm - GitHub Classroom – **NO LATE SUBMISSIONS ACCEPTED**

Create a folder called "Team XX Documents" – place the following inside the folder:

1. UML Class Diagram (.pdf)
2. UML Use Case Diagram (.pdf)
3. UML Use Case Scenarios (.pdf)
4. UML State Diagram (.pdf)
5. Lab report (.pdf file)
6. Code Review (.pdf)
7. PowerPoint Presentation (.pptx)

Upload the following as normal:

8. Source code (.java files)
9. Javadoc (entire doc folder)
10. Updated Event Sheet (.csv)
11. Updated Customer Sheet (.csv)
12. Electronic Ticket for five (six) customers (you, teammates, and three of your favorite Disney characters on the list)
13. Log (.txt)